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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,516	10/23/2003	Yoshihiro Takada	03560.003379.	6065
5514	7590	08/01/2005	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO			GARCIA JR, RENE	
30 ROCKEFELLER PLAZA			ART UNIT	
NEW YORK, NY 10112			PAPER NUMBER	
			2853	

DATE MAILED: 08/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/690,516	TAKADA ET AL.	
	Examiner	Art Unit	
	Rene Garcia, Jr.	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-14 is/are rejected.
- 7) ☒ Claim(s) 7 and 15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>06 April 2004</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: **recording medium 4** (paragraphs: 0045, 0050, 0063). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: spelling error: "bobble" perhaps meant "bubble" (paragraph 0008).

Appropriate correction is required.

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 7 makes reference to "drive pulses".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3-6, 8 and 10-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwasaki et al. (US PGPUB 2002/0041300).

Iwasaki et al. discloses the following apparatus and method:

*regarding claims 1 and 8, a recording apparatus (paragraph 0076; fig. 1) for recording an image by applying ink on a recording medium (paragraph 0076; fig. 1 ref. P) with at least one recording head/1/ (paragraph 0005; fig. 1)

*a timer for measuring a recording downtime when an image-recording operation of the recording head is interrupted during the recording operation and is then resumed (paragraph 0023; fig. 7 Steps: S1002 thru S1009)

*control means for performing a temperature control of the recording head before the resumption of the recording operation, in accordance with the length of the recording downtime measured by the timer (fig. 7; Steps: S1002 thru S1009).

*regarding claims 3 and 10, an electrothermal conversion member/electrothermal converting elements/ (paragraph 0081; fig. 4 ref. 100a) disposed in the recording head/1/ is heated to the extent of not causing ink in the recording head to be discharged therefrom (paragraph 0086).

*regarding claims 4 and 11, temperature sensor/diode sensor/ (fig. 12) for detecting a temperature of the recording head/1/ (paragraph 0081), wherein, with the control means, the

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recording head is heated before the resumption of the recording operation up to a temperature of the recording head detected by the temperature sensor/diode sensor/ before the interruption of the recording operation and is further heated in accordance with the length of the measured recording downtime (fig. 7).

*regarding claims 5 and 12, temperature sensor/diode sensor/ (fig. 12) for detecting temperatures of the recording head/1/ (paragraph 0081) before and after the interruption of the recording operation, wherein, with the control means, the temperature control of the recording head is performed before the resumption of the recording operation in accordance with detected temperatures before and after the interruption of the recording operation and is further performed in accordance with the length of a recording downtime detected thereafter (fig. 7 & fig. 12).

*further regarding claims 6 and 13, wherein said at least one recording head is a plurality of recording heads for different recording ink colors (paragraph 0005)

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki et al. (US PGPUB 2002/0041300) in view of Numata et al. (US 6,126,266)..

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Iwasaki et al. disclose the following apparatus and method limitations:

*regarding claims 1 and 8, a recording apparatus (paragraph 0076; fig. 1) for recording an image by applying ink on a recording medium (paragraph 0076; fig. 1 ref. P) with at least one recording head/1/ (paragraph 0005; fig. 1)

*a timer for measuring a recording downtime when an image-recording operation of the recording head is interrupted during the recording operation and is then resumed (paragraph 0023; fig. 7 Steps: S1002 thru S1009)

*control means for performing a temperature control of the recording head before the resumption of the recording operation, in accordance with the length of the recording downtime measured by the timer (fig. 7; Steps: S1002 thru S1009).

Iwasaki et al. does not disclose the following apparatus and method limitations:

*regarding claims 2 and 9, interruption of the recording operation during an image-recording operation is executed midway through a recording operation of a continuous image.

Numata et al. disclose the following:

* regarding claims 2 and 9, interruption of the recording operation during an image-recording operation is executed midway through a recording operation of a continuous image (col. 38, lines 28-32; replacing heads midway of recording operation is an interruption)

It would have been obvious at the time of the invention was made to a person having ordinary skill in the art to utilize interrupting a recording operation midway replacing a recording head as taught by Numata et al. into Iwasaki et al. for the purpose of temporary use of a recording head in place of an original head.

Allowable Subject Matter

8. Claims 7 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 7 and 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the allowance of claim 7 is the inclusion of the limitation of the number of drive pulses to be applied on the recording head is increased as the recording downtime becomes longer. It is this limitation found in the claim, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claim 15 is the inclusion of the method step being of performing a heating control of the recording heads, the number of drive pulses to be applied on the recording head is increased as the recording downtime becomes longer. It is these steps found in the claim, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

Conclusion

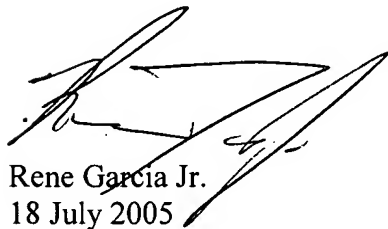
10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Usui (US 6,820,955) disclose a timer for measuring downtime (power-off state). Suzuki et al. (US 5,689,292) disclose timer and print head temperature control means. Otsuka et al. (US 6,139,125) disclose temperature control, a timer for measuring of downtime and control of pulse width in accordance with temperature control means. Otsuka et al. (US 6,193,344) disclose temperature control, a timer for measuring of downtime and control of pulse width in accordance with temperature control means. Kato (US 6,406,113) disclose temperature control, use of an interrupt timer. Kanematsu(US 6,767,080) disclose a timer for temperature control and means to control a pulse signal in accordance with the temperature.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rene Garcia, Jr. whose telephone number is (571) 272-5980. The examiner can normally be reached on M-F 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rene Garcia Jr.
18 July 2005



K. EGGINS
PRIMARY EXAMINER